



Final Report of the Aircraft Accident Investigation Bureau

concerning the incident (Airprox)

between KLM1933 and an unidentified traffic

on 12th september 1999

Geneva Airport Terminal Control Area

AIRCRAFT ACCIDENT INVESTIGATION BUREAU

FINAL REPORT

AIR TRAFFIC INCIDENT REPORT (ATIR)

AIRPROX (NEAR COLLISION)

THIS REPORT HAS BEEN PREPARED FOR THE PURPOSE OF ACCIDENT/INCIDENT PREVENTION. THE LEGAL ASSESSMENT OF ACCIDENT/INCIDENT CAUSES AND CIRCUMSTANCES IS NO CONCERN OF THE INCIDENT INVESTIGATION
(ART. 24 OF THE AIR NAVIGATION LAW)

PLACE	Geneva airport Terminal Control Area
DATE/TIME	12 September 1999 / 0728 UTC
AIRCRAFT	1. KLM 1933, Boeing 737, Amsterdam-Geneva 2. Unidentified traffic

ATC SERVICE	Approach / Arrival
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ATC CONTROLLER	Arrival
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AIRSPACE CATEGORY	C
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HISTORY

On Sunday 12 September 1999 at 15:51 UTC, KLM flight 1933 from Amsterdam to Geneva, a Boeing 737-300 under radar guidance of Geneva Arrival control, is descending to an altitude of 7000 ft. When the pilot states he is ready to turn towards final runway 05, the controller observes unknown traffic in the region of the VOR of Chambéry with transponder code A7010 at an altitude of 6500 ft. This unknown aircraft is following a route opposite to that of KLM 1933. The controller maintains KLM 1933 at an altitude of 7000 ft to ensure separation between the two aircraft and gives it initial precise traffic information. The controller turns KLM 1933 (heading 190 degrees for base turn) and then to the ILS interception (heading 090 degrees) whilst still maintaining 7000 ft to ensure separation from the unknown traffic. The pilot of KLM 1933 does not have visual contact with the aircraft despite further precise traffic information and flight visibility conditions (VMC). Following a resolution advisory from his collision alert system (TCAS), KLM 1933 informs the controller that he is climbing to avoid the unknown traffic. The minimum distance between the two aircraft at this time is 1.3 NM horizontally and 600 ft vertically.

The controller informs him that he has crossed the unknown traffic and that he is re-authorised to descend for a visual approach to runway 05. Despite his high altitude in relation to the ideal descent at the distance at which he finds himself, KLM 1933 succeeds in achieving a normal approach and landing. The pilot submits an ATIR by radio on frequency 119.9 MHz.

FINDINGS

- The aircraft was under radar control, under the jurisdiction of Geneva Arrival control, on frequency 131.320 MHz.
- The aircraft was on intermediate approach, en route to way-point GG503, descending to flight level 100.
- The aircraft was re-authorised to descend to 7000 ft.
- The aircraft announced that it was ready to turn when approaching 7000 ft.
- The Arrival controller turned it left onto an initial heading of 190 degrees.
- The unknown aircraft displayed the transponder code A7010.
- The unknown aircraft penetrated the terminal region in airspace C at an altitude of 6500 ft. without radio contact.
- The controller gave traffic information to KLM 1933 "Unknown aircraft, traffic VFR at 11 o'clock, 6 NM, opposite, probably at 6500 ft".
- The controller turned KLM 1933 onto heading 140degrees, for base turn.
- KLM 1933 advised the controller that he was seeking visual contact.
- The controller did not authorise KLM 1933 to descend.
- According to the radar trace, KLM 1933 was going to cross the route of the unknown aircraft.
- The controller stopped the descent of another incoming aircraft (Speedbird 730) at flight level 080 because of the unknown traffic.
- The controller turned KLM 1933 onto ILS interception heading (heading 90 degrees) giving the traffic information "position 1 o'clock, 2 NM, opposite, 6500 ft".
- Following a call from incoming traffic, confusion in the transmission of the messages occurred on the frequency.
- The controller repeated the authorisation to turn left onto heading 090 degrees to intercept the ILS.

- KLM 1933 acknowledged receipt and indicated to the controller that he was climbing to avoid the traffic.
- According to the radar trace, the minimum separation between the two aircraft was 1.3 NM horizontally and 600 ft vertically.
- KLM 1933 stated that he did not have sight of the traffic but was following a resolution advisory from the TCAS.
- The controller advised the pilot when the unknown traffic was behind him.
- The controller then authorised KLM 1933 for a visual approach.
- At the time of the incident, the meteorological conditions were VMC, visual flight with more than 10 km visibility.
- The pilot submitted an ATIR report by radio, on frequency 119.9 MHz.

ANALYSIS

The encounter between KLM aircraft 1933 and the unknown traffic took place in class C public airspace, in the Geneva terminal control area.

The unknown traffic involved in this incident was visible to the secondary radar and was therefore able to be indicated to the pilot by the controller.

The unknown aircraft, according to the radar trace, penetrated the Chambéry TMA descending from 7700 ft to 6500 ft, an altitude at which it stabilised before penetrating the Geneva TMA. It was in E airspace in the Chambéry TMA. The aircraft was subsequently in C airspace throughout the time it crossed the Geneva terminal area. It did not make radio contact with Geneva TMA control and did not therefore receive transit authorisation.

After leaving the Geneva terminal area, the aircraft was again in E airspace, on French territory. On its route, from its incursion into the Chambéry TMA until it left the Geneva TMA, i.e. over a distance of 36 NM, the unknown aircraft encountered three types of airspace in different classes. First, E airspace in the Chambéry TMA, then C airspace in the Geneva TMA and E airspace north of the Geneva TMA, over French territory. Poor information or inaccurate reading of the VFR charts may have led it to infringe the regulations without knowing it.

The ARRIVALS controller maintained KLM 1933 at 7000 ft, above the altitude displayed on the transponder by the unknown aircraft, which was at 6500 ft. He twice precisely indicated the position of the unknown aircraft to KLM 1933. Despite his attempt to make visual contact, the pilot of KLM 1933 could not do so and had to follow the resolution advisory of the TCAS for an avoiding action. The pilot of KLM 1933 indicated in his ATIR report a spacing of 500 ft vertically according to his TCAS warning. According to the radar trace, the minimum distance was 1.3 NM horizontally and 600 ft vertically.

Swisscontrol recognises that there are too many incidents with unknown aircraft in the Geneva terminal control area. Swisscontrol has handed over to the French authorities the radar trace of this incident in order that they can attempt to identify it after analysis of its route and the allocated transponder code.

CAUSE

The incident is due to an unauthorised incursion of an aircraft into the Geneva terminal area; airspace class C.

Bern, 6 April 2001

Swiss Aircraft Accident Investigation Bureau

**TRANSCRIPT OF TELEPHONY
OR RADIOTELEPHONY COMMUNICATIONS TAPE-RECORDING**

Investigation into the **incident** that occurred on **September 12th 1999**

- Subject of transcript:	KLM1933
- Centre concerned:	Geneva
- Designation of unit:	Arrivals
- Frequency:	131.32 MHz
- Date and period covered by attached extract:	September 12 th 1999 15:45 – 15:57 UTC
- Date of transcript:	September 17 th 1999
- Name of official in charge of transcription service:	Monica Simonet

- Certificate by official in charge of Analysis Department:

I hereby certify:

- That the accompanying transcript of the telephony or radiotelephony communication tape-recording, retained at the present time in the premises of Analysis Department, has been made under my supervision.
- That it was examined and checked by me.
- That no changes have been made to the entries in columns 2, 3 and 4, which contain only clearly understood indications in their original form.

Geneva, September 17th 1999

M. Simonet



TRANSCRIPT SHEET

To <u>Col.1</u>	From <u>Col.2</u>	Hour <u>Col.3</u>	Communications <u>Col.4</u>	Observations <u>Col.5</u>
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Frequency 131.32 MHz: Geneva Arrivals

ARR	1933	15:45: 04	Geneva, Geneva Arrival bonjour, KLM one nine three three passing flight level two one two descending flight level one six zero, the information Charlie.
1933	ARR	12	KLM one nine three three good afternoon, continue as cleared, expect radar vectors to the ILS zero five.
ARR	1933	20	Roger, KLM one nine three three.
ARR	685	47	Geneva bonjour, Swissair six eight five flight level two zero zero descending one six zero, information Charlie, Airbus three nineteen.
685	ARR	57	Six eight five bonsoir, proceed direct to five zero two, descend to flight level one one zero for runway zero five.
ARR	685	15:46: 04	Descending to flight level one one zero, direct to five zero two, Swissair six eight five.
ARR	1933	19	KLM one nine three three, any chance direct to the point Golf Golf five one three ?
1933	ARR	24	Affirm Sir, and descend to flight level one zero zero.
ARR	1933	28	Roger, we'll go there, and flight level one zero zero, KLM one nine three three.
1933	ARR	32	Five zero three, if you wish.
ARR	1933	37	Zero three, merci, KLM one nine three three.
ARR	661	40	Crossair six six one established on localizer ... zero five, confirm we are cleared for the approach ?
661	ARR	45	Affirm six six one, cleared for approach, Tower, one one eight seven, au revoir.
ARR	661	48	One one eight seven, cleared for the approach, Crossair six six one, au revoir, bonne soirée.
661	ARR	53	Merci, pareille.
685	ARR	15:47: 21	Swissair six eight five descend to seven thousand feet, one zero one six.

Signature of
person in charge:

TRANSCRIPT SHEET

<u>To</u> <u>Col.1</u>	<u>From</u> <u>Col.2</u>	<u>Hour</u> <u>Col.3</u>	<u>Communications</u> <u>Col.4</u>	<u>Observations</u> <u>Col.5</u>
ARR	685	15:47: 25	Descending ?????? seven thousand, one zero one six, Swissair six eight five.	unreadable
1933	ARR	15:48: 04	KLM one nine three three descend to seven thousand feet, one zero one six.	
ARR	1933	08	One zero one six and seven thousand feet, KLM one s..., nine three three.	
ARR	106	28	Genève Arrivées bonjour, TAG Aviation cent six, one est en descente vers le cent soixante avec l'information Charlie.	
106	ARR	34	TAG cent six bonjour, descendez au niveau cent quarante pour la zéro cinq.	
ARR	106	39	Autorisé à descendre vers le cent quarante pour la zéro cinq, cent six.	bad quality of transmission
685	ARR	43	Swissair six eight five would you be ready to turn base now ?	
ARR	685	46	Heu not now, Swissair six eight five, negative.	
685	ARR	49	Roger.	
ARR	730	52	Arrivals good evening, Speedbird seven three zero, passing one nine zero, descending flight level one six zero, a seven five seven, information Charlie.	
730	ARR	59	Speedbird seven three zero good evening, turn right heading one eight zero positioning for runway zero five descend to flight level one zero zero.	
ARR	730	15:49: 06	Descending one eight zero, cleared flight level one zero zero for runway zero five, Speedbird seven three zero.	
ARR	685	32	Swissair six eight five is ready for inbound turn.	
685	ARR	36	Roger, cleared for approach.	
ARR	685	39	Cleared for approach, Swissair six eight five, merci.	
106	ARR	56	TAG... one zero six descend to flight level one one zero.	
ARR	106	15:50: 00	Cleared down to flight level one one zero, TAG aviation one O six.	

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685	ARR	04	Swissair six eight five descend to six thousand feet, further when established.	
ARR	685	08	Descending now to six thousand, further when established, Swissair six eight five.	
730	ARR	22	Speedbird seven three zero reduce to two five zero knots.	
ARR	730	25	Reducing two fifty knots, Speedbird seven three zero.	
106	ARR	15:51: 11	TAG one zero six descend to flight level one zero zero.	
ARR	106	14	Down to flight level one zero zero, TAG Aviation one O six.	
106	ARR	18	Okay, what is your heading ?	
ARR	106	21	Two seven zero, one O six.	
106	ARR	23	Okay, turn right heading two niner zero.	
ARR	106	25	Right on a heading two niner zero, TAG Aviation one O six.	
ARR	1933	38	KLM one nine three three is ready for the base turn, approaching seven thousand feet.	bad quality of transmission
1933	ARR	42	Yes, turn left initially heading..... one niner zero, I call you back for further.	
ARR	1933	49	Left heading one niner zero, KLM one nine three three.	bad quality of transmission
685	ARR	53	Six eight five are you on visual ?	
ARR	685	55	Affirm, on visual, runway in sight, Swissair six eight five.	
685	ARR	59	Roger, cleared visual approach, keep at least on eighty to Passeiry, call Tower, one one eight seven, good-bye.	
ARR	685	15:52: 04	Copied the speed and over eighteen seven, merci, au revoir, Swissair six eight five.	
685	ARR	15:52: 09	Au revoir Monsieur.	
106	ARR	27	TAG one O six descend to six thousand feet, one zero one five.	

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ARR	106	32	Six thousand feet, one zero one five, TAG Aviation one O six.	
106	ARR	35	Do you have the field in sight ?	
ARR	106	38	Affirm, we're ready for a visual.	
106	ARR	40	Okay, continue right to Passeiry and descend for visual approach, number two, number one is then miles final, ten miles abo..., heu in front of you.	
ARR	106	49	Okay, we're cleared for a visual and number two, TAG Aviation one O six.	
730	ARR	54	Speedbird seven three zero descend to seven thousand feet on one zero one five, turn right heading two zero zero, track correction.	
ARR	730	15:53: 02	Heu right heading two zero zero, and descend seven thousand feet, QNH one zero one five, Speedbird seven three zero.	
ARR	730	12	Speedbird seven three zero, can we just stay on the ????? for a few miles, just to avoid a, a build up.	unreadable
730	ARR	16	Affirm, and descend initially to flight level eight zero due to unknown VFR traffic.	
ARR	730	22	Just stop our descent at flight level eight zero and we're turning in three miles, Speedbird seven three zero.	
1933	ARR	41	KLM one nine three three, we have an unknown VFR traffic at your eleven o'clock position, six miles, opposite, hm... at, it seems to be at six thousand five hundred feet. Turn left heading one four zero for base.	
ARR	1933	55	Left heading one four zero, we're looking, KLM one nine three three.	
ARR	730	59	And we're turning now right heading two zero zero now, Speedbird seven three zero.	
730	ARR	15:54: 02	Roger.	
ARR	932G	08	Geneva Arrival, Swissair nine three two Golf bonjour, one three zero, information Charlie, three twenty on a VADAR one November.	

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<u>To</u> <u>Col.1</u>	<u>From</u> <u>Col.2</u>	<u>Hour</u> <u>Col.3</u>	<u>Communications</u> <u>Col.4</u>	<u>Observations</u> <u>Col.5</u>
1933	ARR	18	KLM one nine three three continue left turn to the ILS, heading zero niner zero, the VFR traffic is now at your one o'clock position, two miles, opposite, six thousand five hundred feet.	
ARR	1933	29	Copied.	
ARR	932G	37	Geneva, Swiss..., ?????? two Golf bonjour, Charlie information, one three zero the level.	unreadable
932G	ARR	41	KLM on..., nine three two Golf bonjour, I call you back.	
1933	ARR	43	KLM one nine three three turn left heading zero nine zero to join localizer.	
ARR	1933	47	Left heading zero nine zero, localizer, we're climbing KLM one nine three three, to avoid.	
1933	ARR	51	Do you have him in sight ?	
ARR	1933	53	Negative, on TCAS we had a warning.	
1933	ARR	56	Okay, do you have the field in sight now ?	
ARR	1933	15:55: 01	Heu traffic is gone, and XXXXX.	probably: "VFR looking"
1933	ARR	05	Yes, do you have the field in sight ?	
ARR	1933	08	Affirm, KLM one nine three three.	
1933	ARR	10	The traffic is behind, you are cleared for visual approach and reduce your speed to one eight zero knots, please.	
ARR	1933	16	Speed one eighty, cleared for a visual, KLM one nine three three.	
730	ARR	20	Speedbird seven three zero, the VFR unknown traffic is at you eleven o'clock position, two miles, six thousand four hundred feet.	
ARR	730	28	Speedbird seven three zero roger, we've got, I've got him in sight, he is just passing us now.	
730	ARR	15:55: 33	Roger, turn now left heading zero eight zero to join localizer, descend to six thousand feet, one zero one five.	
ARR	730	38	Cleared six thousand feet on one zero one five, and left heading zero eight zero, to join the localizer zero five, Speedbird seven three zero.	

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1933	ARR	47	KLM one nine three three, are you able to make it ? You are five miles behind preceding and... much....., much more speed, you w..., much faster, do you wish a three sixty ?	
ARR	1933	59	Negative, KLM one nine three three, we'll make it.	
1933	ARR	15:56: 01	Yes, are you able to reduce also ?	
ARR	1933	03	Yea, we're reducing, KLM one nine three three.	
106	ARR	05	TAG one O six are you able to keep your speed to three miles ?	
ARR	106	09	Affirm.	
106	ARR	10	Okay, keep your speed to three miles and call Tower, one one eight seven, au revoir.	
ARR	106	14	Keep the speed to three miles and one eighteen seven, au revoir Madame.	
1933	ARR	19	KLM one nine three three your passing speed ?	
ARR	1933	24	Speed at the moment one seventy, KLM one nine three three.	
1933	ARR	27	Okay, continue reducing to approach speed.	
ARR	1933	30	Roger.	
730	ARR	32	Speedbird seven three zero descend to six thousand feet, further on the glide.	
ARR	730	35	Descend to six thousand feet, further on the glide, Speedbird seven three zero.	
932G	ARR	15:56 44	Swissair nine three two Golf maintain flight level one three zero on VADAR one November, I call you back.	
ARR	932G	50	Swissair nine three two Golf, one three zero the level.	
1933	ARR	15:57: 31	KLM one nine three three, you are now four miles behind preceding, contact Tower, one one eight seven, good-bye.	

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ARR	1933	37	One one eight seven, KLM one nine three three.	

Abbreviations

ARR - Geneva Arrivals

1933 - KLM1933	B733	IFR flight	EHAM - LSGG
685 - Swissair 685	A319	"	LEMG - LSGG
661 - Crossair 661	SB20	"	LEPA - LSGG
106 - TAG Aviation 106	LJ35	"	LFKB - LSGG
730 - Speedbird 730	B752	"	EGLL - LSGG
932G - Swissair 932G	A320	"	LSZH - LSGG

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Signature of
person in charge:



